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# Vowel length in Shetland Norn

Contact, change, and competing systems

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## 1 Background

### 1.1 Shetland: a linguistic history

#### Population history

- Settlement from Scandinavia from AD 800
  - Part of Norway
  - Some contact with Scotland
- Pawned to the Scottish crown and then incorporated: 1469–1472
  - Increased contact with Scotland
  - Settlement of Scots and intermarriage (Knooihuizen 2008b)
  - Several waves of immigration (16th, 19th, 20th century)

#### Shetland Norn

- West / Insular North Germanic language
  - Potentially some Celtic influence (Lindqvist 2015)
  - Similar to Faroese in many respects (Barnes 1998)
    - \* e.g. *Verschärfung*, diphthongisation of /i:/ = y:/, loss of /θ ð/ (?)
  - Many common features with the dialects of western Norway
- Language death around 1750 (but controversial; e. g. Melchers 1981, Knooihuizen 2008a)
- Few direct sources

- A few medieval documents (Barnes 1998)
- The Lord's Prayer, a ballad, a word list (Low 1879, Hægstad 1900, Rendboe 1984, 1987, 1989, 1990, 1993)
- Dictionary (1890s) (Jakobsen 1908–1921, 1928–1932)

### Jakob Jakobsen

- Faroese linguist (1864–1918) (see Barnes 1996, Dahl 2010)
  - Trained in tradition of Sweet and Jespersen
  - Active in Faroese linguistic revival
  - Phonetic transcriptions, (failed) spelling reform
- Fieldwork in Shetland, 1893
  - Ph.D., *Det norrøne sprog på Shetland* (1897)
  - *Etymological Dictionary*, finished posthumously
    - \* 'Phonetics run riot' (Stewart 1964)
    - \* But analysis shows consistent patterns (Knooihuizen 2013, this paper?)

**hol<sup>1</sup>** [hōl, hō<sup>a</sup>l], sb., *a young coal-fish*, esp. *a two- (or thre-) year-old coalfish*, comm. in the compd. *hol-piltek* [pʰɹ̥l̥tək]. U., Y<sup>h.,n.</sup> *hol* for older \**ol*, either (and rather) = O.N. *áll*, m., *an eel*, or = O.N. *vølr*, m., *a cylinder, round stick* — in both cases alluding to the longish, narrow shape of the fish. Cf. *ol* in *ollek* = No. *vallonga*, f., *a young ling*. *hol-piltek* thus prob. from an original \**ál* (or \**val*)-*piltr* (*piltungr*).

### Shetland Scots

- Conservative Scots dialect
  - Immigrant koiné (McColl Millar 2008, Knooihuizen 2009)
  - Input from Angus, Fife, Lothian
  - North Germanic substrate
- Complicated linguistic history
  - Several waves of Scots and North Germanic influence
  - Poorly documented substrate
- Currently: dialect obsolescence (Smith & Durham 2011, 2012)

## 1.2 Quantity in Shetland

### Scottish Vowel Length Rule

- Developed in the 15th-17th centuries (Aitken 1981)
- Lax vowels are always short
- Tense vowels are short, unless followed by
  - Morpheme boundary
  - Voiced fricatives /v z ð/
  - /r/
- Regional variation:
  - Participating vowels
  - Constraints on application

### SVLR in Shetland Scots

- See Knooihuizen (2009)
  - Based on LAS (Mather & Speitel 1975–1986)
    - /Y/ and /W/ are short
    - /I/ and /U/: classic SVLR pattern
    - /E/: classic SVLR pattern, BAIT set always long
    - /O/: classic SVLR pattern, long before /l/ and nasals
    - /A/: classic SVLR pattern, long if from \**au*, \**al*
- 👉 Overall classic SVLR with some compensatory lengthening?

### The phonetics of quantity in Shetland

- Inverse correlation of vowel and consonant duration (van Leyden 2004)
- The inverse correlation is much stronger in Shetland than in Orkney or Edinburgh
- ...but weaker than in Norwegian

### Quantity in Old Norse

- In Old Norse, all types of syllable weight were allowed (e. g. Haugen 1976, Riad 1992, Kristoffersen 2011)
- Old Norwegian
  - Monosyllables: *son* 'son', *sól* 'sun', *holl* 'hall', *sótt* 'illness'
  - Disyllables: *syni* 'son-DAT.SG', *sólu* 'sun-DAT.SG', *hollu* 'hall-DAT.SG', *sóttu* 'illness-DAT.SG'
- (Except CV monosyllables)

## Quantity shifts

- The ‘great quantity shift’: all stressed syllables become obligatorily CVX<sup>1</sup>
- Everywhere except some inland Norwegian and Swedish dialects and Fenno-Swedish, but including Faroese and Icelandic
- Dates between mid 13th to mid 16th century (Haugen 1976)
- ☞ Towards the end of this period for Insular North Germanic (Kristján Árnason 1980, Lindqvist 2003)
- Superheavy syllables shorten, light syllables have either vowel or consonant lengthening

## Hesselman’s laws

- Originally by Hesselman (1902), see also Riad (1992)
- Not really *Lautgesetze* but rather tendencies
  1. CVC undergoes lengthening earlier than CVCV
  2. Low vowels [a æ] always lengthen
  3. With non-low vowels, either the consonant or the vowel lengthens

## Consonant influence on lengthening

- Central and northern Swedish: no lengthening before fortis obstruents [p t k s] (Hesselman 1902), also [r]
- Norwegian: generally vowel lengthening (with local exceptions not relevant to us), no notable consonant asymmetries

## Quality shifts

- Standard varieties of peninsular North Germanic are *mutatis mutandis* like most of English
- Modern short vowels are lax, modern long vowels are tense (Kristoffersen 2000, Riad 2014)
- ☞ Central Standard Swedish *bit* [‘bi:t] ‘piece’ ≠ *vinn* [‘vɪn:] ‘win!’
- Modern insular North Germanic (Kristján Árnason 1980, 2011), conservative western Norwegian (Sandøy 1985)
  - ON long vowels are tense (→ diphthongized), long or short: Icelandic *bíta* [‘pi:ta] ‘bite’, *hvítt* [kfiht] ‘white-NEUT.NOM.SG’
  - ON short vowels are lax (→ lowered), long or short: Icelandic *vita* [‘vɪ:ta] ‘know’, *fiskur* [‘fiskyr] ‘fish’ (WestNo *veta*, NorthNo *fesk*)

<sup>1</sup>An alternative notation focusing on rhymes in stressed monosyllables is also used (e.g. Kristján Árnason 1980: 16; Barnes 1991: 437 on Shetland Norn). The correspondences are as follows: CV = –VC (short, ON *son*); CVV = –VVC (vowel-long, ON *sól*); CVC = –VCC (consonant-long, ON *holl*); CVVC = –VVCC (overlong, ON *sótt*).

### 1.3 The research question

#### Vowel length in Shetland Norn

It could well be that the syllabic structure of modern Shetland speech reflects, at least in part, a Norn substratum. A thousand pities then that this phenomenon never seems to have been observed by Jakobsen. [...] Once again we are faced with an impasse on a fundamental issue of Norn phonology, and it is not easy to see any satisfactory way forward.

(Barnes 1991: 437)

#### Competing systems in Shetland Norn

- Shetland Scots has been argued to evidence new-dialect formation mechanisms (McColl Millar 2008, Knooihuizen 2009)
- Can we see traces of multiple inputs in Shetland Norn?
- If the input systems agree in some feature, we expect the outcome to have that feature
- If the input systems disagree, then some features will be lost due to focusing
- Our focus here is on differences in quantity behaviour between Scots and (West) Nordic

Feature	Outcome	
	West Nordic	Scots
CVC syllable	Short, lax ON <i>fiskr</i> → ModIc <i>f[i]skur</i>	Short, lax OScots <i>kist</i> → Scots <i>k[i]st</i>
CVV syllable	Long, tense/diphthongized ON <i>bíta</i> → ModIc <i>b[i:]ta</i>	Short or long, tense/diphthongized OSc <i>mete</i> → Sc <i>m[i]t</i> OSc <i>leve</i> → Sc <i>l[i:]v</i>
CV syllable	Long, tense or lax/lowered ON <i>skin</i> ‘sheen’ → NoNynorsk <i>sk[i:]n</i> ON <i>lifa</i> → ModIc <i>l[i:]fa</i> , NoNynorsk <i>leve</i>	Short, lax OSc <i>bit</i> → Sc <i>b[i]t</i>
CVVC syllable	Short, tense or lax/lowered ON <i>hvítt</i> ‘white-NEUT’ → ModIc <i>hv[i]tt</i> → ModSw <i>v[i]tt</i>	It’s complicated...
Restrictions on length	No	SVLR

Table 1: Differences in quantity shift outcomes

### Research questions, bluntly put

- How reliable is the data?
  - Is it just a mess of overanalysed transcriptions?
  - Is it phonologically just Shetland Scots?
- If it does represent Norn in some way...
  - Can we discover what happened to quantity in Norn?
  - Was it in line with what happened in West Nordic otherwise?
  - Was there any input from Scots?

## 2 Analysis

### 2.1 Data and methods

#### *Etymological Dictionary* data

- Transcriptions from G and H headwords,  $n = 1614$ 
  - Included if Old Norse (putative) etymology given
- Coded for...
  - Norn vowel quantity, quality
  - Old Norse vowel quantity, quality
  - Norn, Old Norse following consonant
  - Old Norse syllable type<sup>2</sup>
- Norn vowels
  - Our attempt to convert Jakobsen's descriptions to IPA and reduce the number of categories
  - Based on his description and transcriptions of Faroese he made using the same system (Hammershaimb 1886–1891, compared with Lockwood 1977)
  - Also coded for 'tense'/'lax' based on these interpretations

#### Analysis

- Many conditions poorly represented
- Focus on ON /i u y e o a/
  - Reasonably well represented in the corpus
  - Reflexes expected to participate in SVLR pattern, if any is found
- Quantitative analysis: are the observed distributions just noise?
- Generalized linear mixed models with lme4 (Bates et al. 2015)

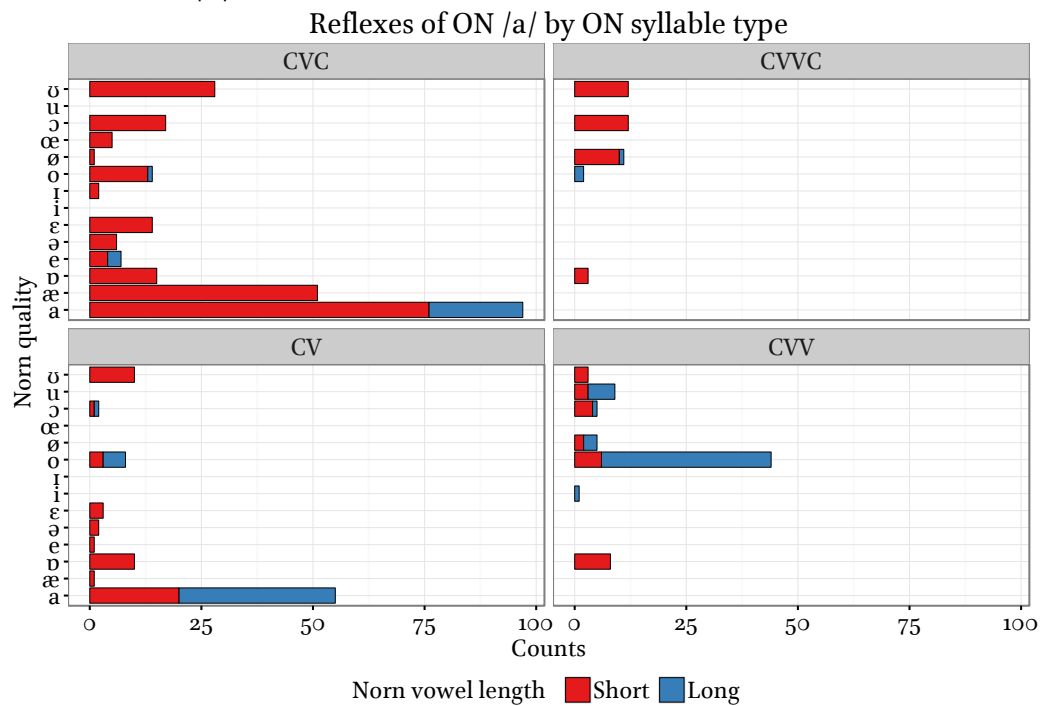
☞ More as a sanity check

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<sup>2</sup>Unlike in his transcriptions for Faroese, Jakobsen does not mark consonant length in his Shetland Norn transcriptions. Less than a handful of isolated examples were found in our data.

## 2.2 Sanity checks

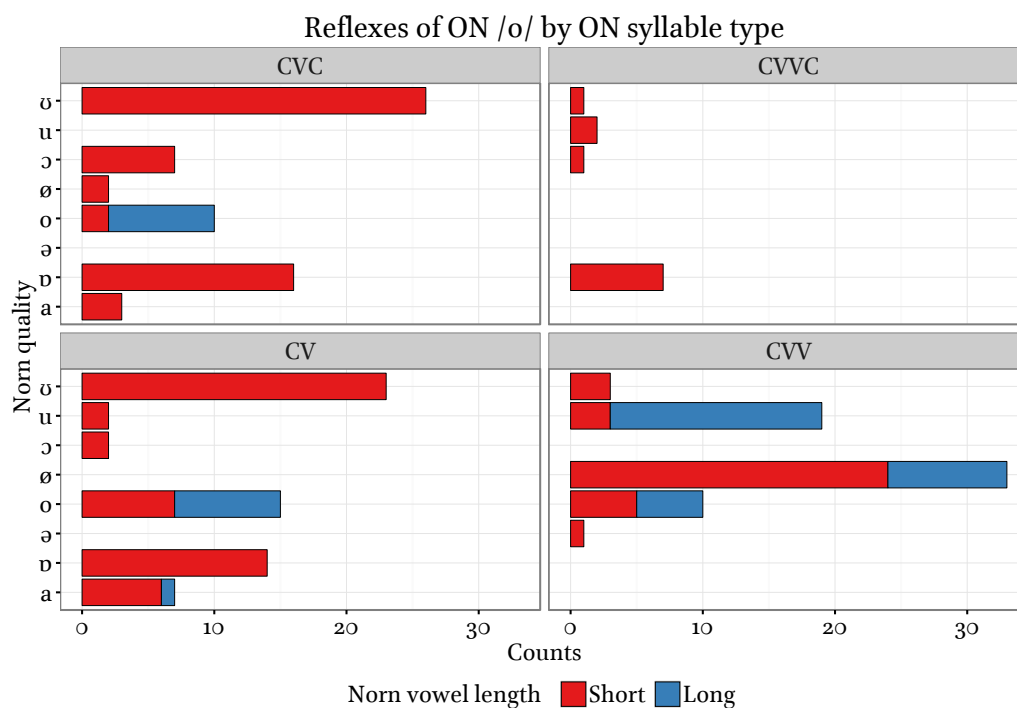
### Reflexes of Old Norse /a/



- We come back to ON *a* later, but it mostly a low, unrounded vowel
- ON *á*, whether short or long, is overwhelmingly round
- This is in line with expectations
  - Continental North Germanic <ǣ>
  - Faroese short [ɔ] ~ long [ɔa]

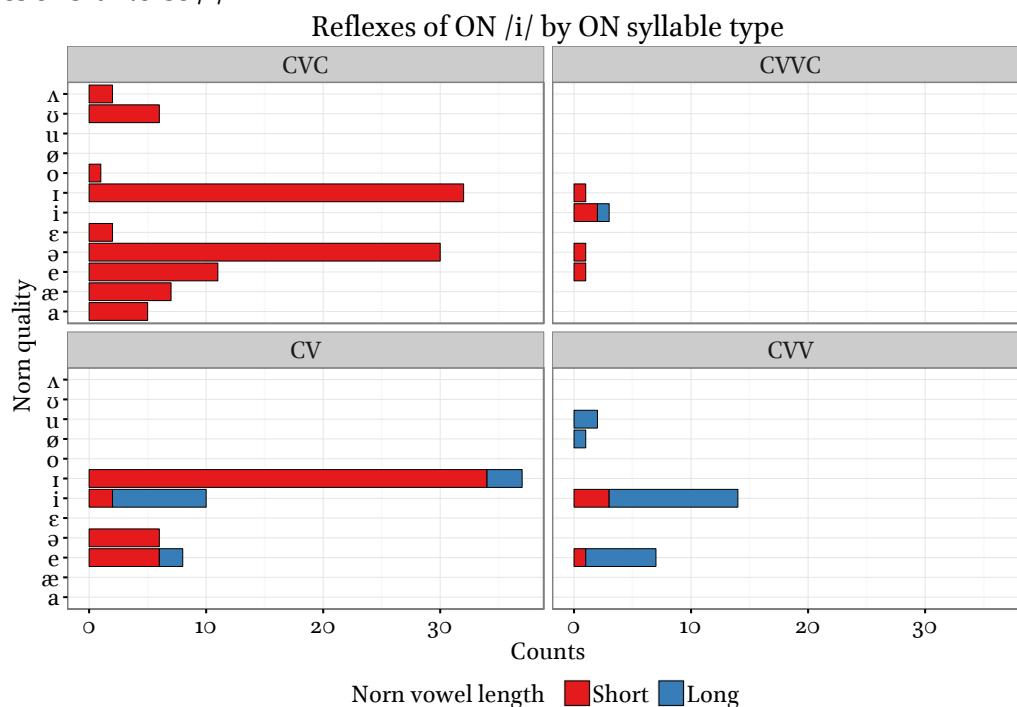
### Reflexes of Old Norse /o/





- ON *ó* often becomes [ø] when short in Norn and [u] when long in Norn
- Cf. Faroese: <ó> is short [œ]/[ɔ̃] ~ long [ou] (Lockwood 1977)
- Lindqvist (2003) reconstructs [øu(:)]

### Reflexes of Old Norse /i/



- ON *í* is mostly [i:] or maybe [e:]
- ON *i*, unless it lengthens, is [ɪ] ~ [e] ~ [ə]
- Difficult to quantify but consistent to some extent with the West Nordic development
- Cf. ON *higr* → Norn [hɪrg]

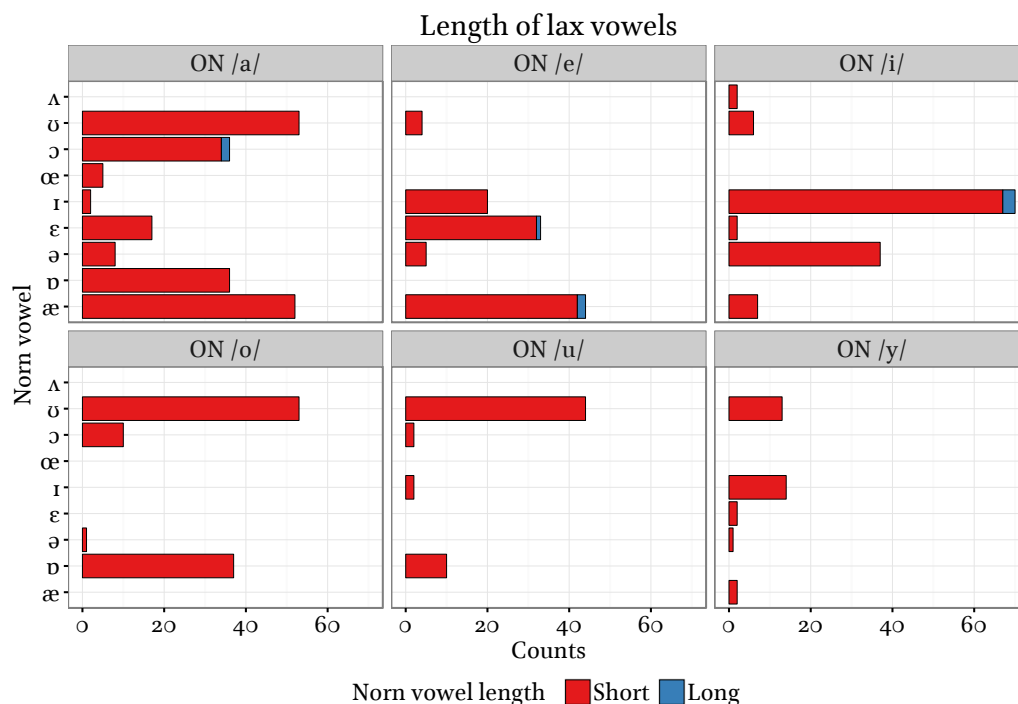
### Preliminary conclusions

- Not necessarily ‘phonetics run riot’
- Many developments visible in the data that make sense in a West Nordic context
  - Jakobsen (1928–1932) comments on the ON *á* → Norn [o] development
  - The Faroese-like ON *ó* → Norn [ø] change does not seem as notable in the literature

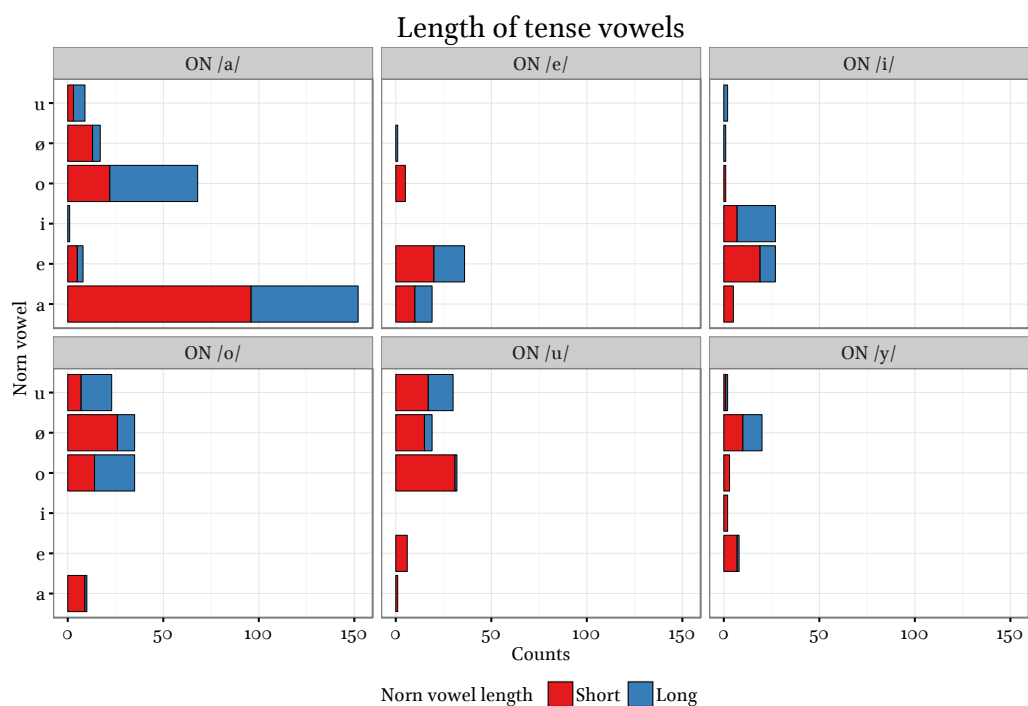
## 2.3 SVLR in Shetland Norn

### Synchronic length in Norn

- Synchronically, lax vowels are almost never long in the data

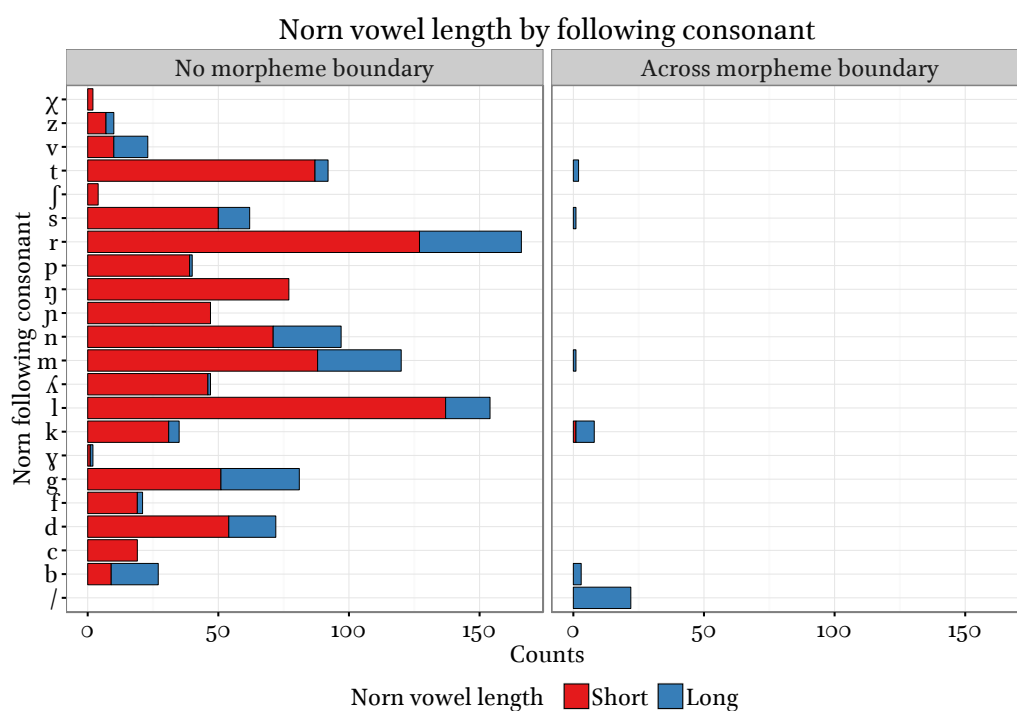


- Tense vowels can be short or long
- Is this an SVLR pattern?



### Synchronic SVLR in Norn

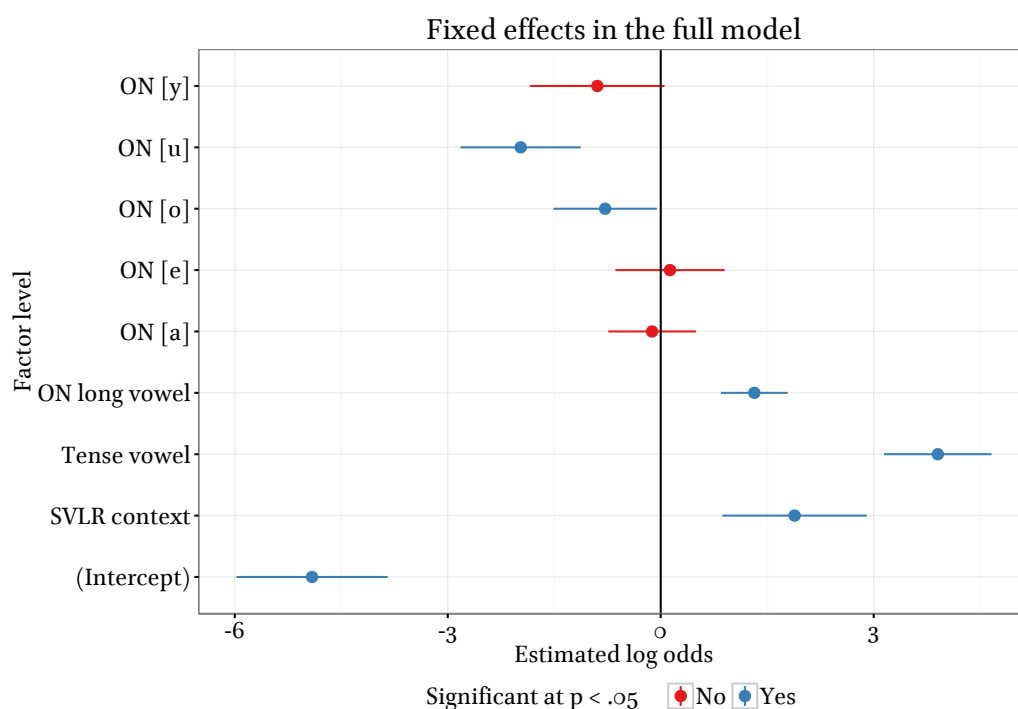
- If the data show Scots phonology, we expect a synchronic SVLR effect



## Testing for synchronic SVLR

- A synchronic SVLR effect would imply long vowels
  - Before voiced fricatives and /r/
  - Before a morpheme boundary
  - Before Norm [d] from ON  $\partial$ , as  $\partial$ -stopping in Shetland counterbleeds SVLR (Aitken 1981, van Leyden 2004)
- ...but not elsewhere
- We try to quantify this using logistic regression

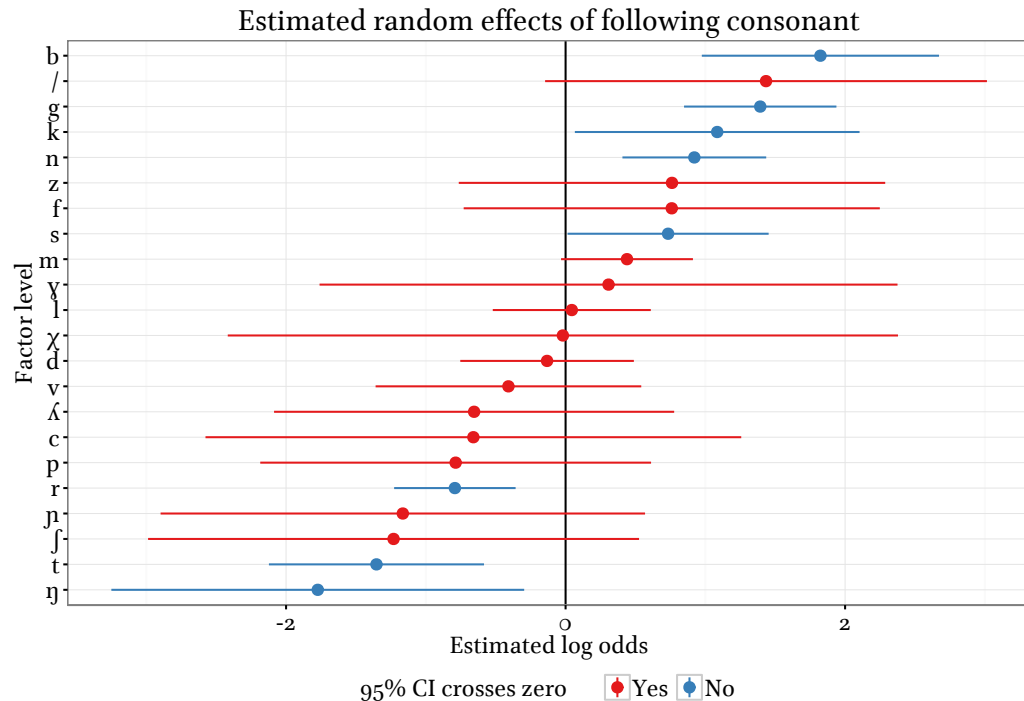
```
full_fit <- glmer(norn.long ~ norn.svlr + norn.tense +
  on.quality + on.long +
  (1|norn.foll.c),
  data=model_data,
  family=binomial(link=logit))
```



- Synchronic conclusion
  - Synchronic tenseness and ON length are good predictors of Norm length
  - ... but SVLR makes a contribution over and above these
- So it *just* Scots?

### A closer look at the random effects

- The regression tells us that *on average* an SVLR context promotes length of the preceding vowel
- But it seems that the conditioning of length in Norn is not fully in line with the SVLR



- These results should be taken with a pinch of salt, but...
  - Contexts promoting lengthening (beyond the fixed effects): /b k g n s/
  - Contexts dispreferring lengthening: /t ɲ r/
- Shortening beyond SVLR: /t/ is usually from ON *tt*, /ɲ/ is a coda
- /r/ seems genuinely out of line
- Lengthening beyond SVLR: recall that West Nordic preferentially lengthens vowels in CV syllables

## 3 Discussion

### 3.1 North Germanic features in Shetland Norn?

#### General quantity facts

- Generally, ON vowels keep their length in Shetland Norn
  - Relatively little lengthening of short vowels, even in the presence of an SVLR effect

- Relatively little shortening of long vowels (other than elimination of overlength, shared with West Nordic)
- Not clear whether there are coexisting systems or just preservation of archaic features
- We do suggest that the North Germanic quantity system was not completely clobbered by the SVLR

### Low vowel lengthening

- ON short *a* does undergo lengthening quite often in this data
- There is nothing special about /a/ in Scots vowel systems
- Across North Germanic, ON *a* and *æ* are the vowels that most regularly undergo lengthening
- ☞ Even in varieties with consonantal restrictions on lengthening
- This is suggestive

### The effect of SVLR

- Despite an apparent synchronic SVLR effect, the restrictions on length go beyond it
- LAS data show SVLR to be fairly normal in the Scots lexicon of Shetland Scots
- Shetland Scots also lengthens [a] from \**au*, \**al*, but that does not happen in this material
- Various interpretations possible, but we suggest Jakobsen's data does contain material with a West Nordic system

## 3.2 Summary

### Conclusions

- Vowel quantity information in the Jakobsen material is not just chaotic noise
- The vowel quantity system is not identical to that of Shetland Scots
- Some of the features of the quantity system have clear precursors or direct parallels elsewhere in West Nordic
- ☞ It is worth examining the material for clues regarding the possible North Germanic substrate of Shetland Scots
- See Lehiste (1965) on this kind of archæology

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	Full model	No SVLR effect	No ON quantity effect	No tenseness effect
(Intercept)	−4.91*** (0.54)	−4.65*** (0.59)	−4.63*** (0.53)	−2.97*** (0.44)
Norn SVLR context	1.89*** (0.52)		2.21*** (0.49)	1.99*** (0.47)
Norn tenseness	3.90*** (0.39)	3.98*** (0.39)	4.04*** (0.39)	
ON [a]	−0.12 (0.31)	−0.05 (0.32)	−0.26 (0.30)	0.65* (0.26)
ON [e]	0.13 (0.39)	0.11 (0.39)	−0.16 (0.38)	0.44 (0.33)
ON [o]	−0.78* (0.37)	−0.80* (0.38)	−0.58 (0.36)	−0.01 (0.32)
ON [u]	−1.97*** (0.43)	−1.95*** (0.43)	−1.69*** (0.41)	−1.00** (0.37)
ON [y]	−0.89 (0.48)	−0.93 (0.49)	−0.77 (0.47)	−0.05 (0.42)
ON long vowel	1.32*** (0.24)	1.45*** (0.24)		1.71*** (0.21)
AIC	763.75	774.91	793.36	992.06
BIC	814.94	820.98	839.43	1038.12
Log Likelihood	−371.88	−378.45	−387.68	−487.03

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$

Table 2: The full model and some models with terms excluded (outcome variable: Norn vowel length)

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